

WHAT IS CLAIMED IS:

1. An optical information recording medium comprising:  
a pit recording area recorded with various control information by a prepit; and

a user recording area having a guide groove, wherein a track is formed by groove format and a phase depth for the prepit and the guide groove are approximately less than or equal to  $\lambda/10$ , where  $\lambda$  is the wavelength of a light source for reproducing information from the optical information recording medium.

2. A recording and reproducing apparatus for an optical information recording medium comprising a pit recording area recorded with various control information by a prepit, and a user recording area having a guide groove, wherein a track for the user recording area is formed in groove format, the recording and reproducing apparatus comprising:

decoding means for decoding information from the optical information recording medium by detecting a signal in a form of a tangential push-pull reproduced signal from the pit recording area, and detecting another signal in a form of an aggregated signal from the user recording area.

3. The recording and reproducing apparatus as claimed in claim 2, wherein the decoding means comprises a waveform equalizing circuit for obtaining a desirable partial response characteristic from the tangential push-pull reproduced signal.

4. The recording and reproducing apparatus as claimed in claim 2, wherein the decoding means is a viterbi decoder.

5. The recording and reproducing apparatus as claimed in claim 3, wherein a partial response polynomial equation for equalizing a reproduced signal in the partial response characteristic is  $1+D-D^2-D^3$ .

6. The recording and reproducing apparatus as claimed in claim 3, wherein the decoding means is a viterbi decoder.

7. The recording and reproducing apparatus as claimed in claim 4, wherein a partial response polynomial equation for equalizing a reproduced signal in the partial response characteristic is  $1+D-D^2-D^3$ .

8. A reproducing apparatus for an optical information recording medium comprising a pit recording area recorded with various control information by a prepit, and a user recording area having a guide groove, wherein a track for the user recording area is formed in groove format, the reproducing apparatus comprising:

decoding means for decoding information from the optical information recording medium by detecting a signal in a form of a tangential push-pull reproduced signal from the pit recording area, and detecting another signal in a form of an aggregated signal from the user recording area.